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YOUNG KINGFISHERS
TWENTY-THREE DAYS OLD

See page 69

NORTHEASTERN BIRD-BANDING ASSOCIATION

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BULLETIN

OF THE

NORTHEASTERN BIRD-BANDING ASSOCIATION

THE AGE OF BANDED BIRDS

BY J. T. NICHOLS

Some years ago when bird-banding in America was in its infancy, one of the obvious problems to which it seemed to the writer to offer a solution, was the normal span of life of the individual bird. With the various other interesting problems on which this method of study is throwing light, that of age has more or less lapsed from immediate attention. Nevertheless it has not lost its philosophical importance, and it must be one of those which continually comes to mind with the individual operator, in the consideration of records obtained.

Considering the stress of their environment, the most rational postulate as to course of life in wild animals or birds, is a high death rate prior to gaining full adult strength and vigor, then comparative safety until the decline with age begins, then almost immediate elimination. This view (likely held by earlier writers also) was very clearly stated by E. T. Seton some years ago. It would imply a fairly definite normal age limit at or slightly beyond the point where physical decline sets in, if that point is rather definite, which seems likely. Accumulating data on longevity from banded birds would approach this limit, but rarely exceed it. The same species in captivity might show a normal age limit much less clearly, it being a reasonable hypothesis that such unnatural surroundings would impose greatest restraints and be most detrimental to health in what should be the full vigor of middle life, while rather tending to decrease the death rate in youth and in age.

A certain amount of data on longevity accumulated from American banded birds has been published incidentally, but in a scattered and rather inaccessible form. When sufficient records are to hand to justify a more or less final statement in the matter, we trust that we shall hear from the Biological Survey concerning it. Meanwhile it is worth the necessary

space to assemble for our convenience such information as is immediately to hand. The following list, as a starter, has been taken from Lincoln, 1924, Dept. Bull. No. 1268, with additions and emendations from earlier numbers of this (Northeastern B. B. Assn.) bulletin, the two bulletins of the Eastern B. B. Assn., and one or two other sources. The writer hopes that others will be interested to build on this slight beginning, from the already considerable (and sadly scattered) literature of American bird-banding,[1] and from their own records.

A word of explanation as to the list. Ages are approximate minima as indicated by first and last records from the individual bird. When the first record is in late winter or spring, it is assumed that the bird dates at least from the preceding summer. In as much as full data is not listed, an initial letter will serve as an index to the source of each record (where it may be looked for) as follows:

B.—"Bird-Lore," Season reports: 1925, p. 11; 1926, p. 270.
C.—M. S. Crosby, unpublished records.
E.—Bull. Eastern B. B. Assn., No. 2, p. 15.
L.—Lincoln, 1924; Returns from Banded Birds, U. S. Dept. Agr., Dept. Bull. No. 1268.
N.[1]—Bull. Northeastern B. B. Assn., I, p. 31.
N.[2]—Bull. Northeastern B. B. Assn., II, p. 49, 63, 87.
N.[3]—Bull. Northeastern B. B. Assn., III, p. 9, 20, 28.

TENTATIVE LIST OF BANDED BIRDS AND AGES

L.	Herring Gull 25386.	July 19, 1915.	Aug., 1920.	5 years
N.[3]	Common Tern 1258.	July 3, 1913.	Aug., 1917.	4 "
L.	Mallard 36845.	April 8, 1918.	Nov. 19, 1921.	4 "
L.	Black Duck 36903.	Aug. 31, 1918.	Mar. 31, 1921.	3 "
L.	Green-winged Teal 43110.	Feb. 12, 1917.	April 28, 1920.	4 "
L.	Pintail 36222.	Feb. 2, 1917.	Oct. 28, 1922.	6 "
L.	White-faced Glossy Ibis 3539.	July 3, 1916.	Oct. 22, 1922.	6 "
L.	Snowy Egret 3615.	July 3, 1916.	Jan. 20, 1923.	7 "
L.	Black-crowned Night Heron 24536.	June 10, 1915.	June 4, 1921.	6 "
L.	Ferruginous Rough-leg 37998.	July 2, 1916.	Sept. 29, 1919.	3 "
L.	Red-bellied Woodpecker 31778.	Mar. 7, 1916.	Feb. 16, 1920.	5 "
L.	Chimney Swift 38461.	June 6, 1916. (adult)	July 3, 1923.	8 "

[1] A study of the pages of The Auk, The Condor, and the Wilson Bulletin should yield significant additions.

L.	Blue Jay 31775.	Mar. 1, 1916.	Mar. 26, 1921.	6 years
B.	Am. Crow 23021.	June 22, 1917. (adult)	Oct. 21, 1924.	8 "
L.	Purple Grackle 34538.	April 10, 1917.	June, 1920.	4 "
N.[2]	Purple Finch.	1923.	1926.	3 "
L.	White-Throated Sparrow 38160.	Mar. 5, 1916.	Mar. 27, 1921.	6 "
N.[2]	Tree Sparrow 6912.	Jan. 29, 1922.	Jan. 3, 1926.	5 "
N.[3]	Tree Sparrow	Feb. 24, 1923.	Jan. 2, 1927.	5 "
L.	Chipping Sparrow 38839.	Mar. 26, 1917.	Mar. 24, 1921.	5 "
L.	Chipping Sparrow 38643.	Sept. 12, 1916.	Sept. 25, 1920.	4 "
L.	Slate-colored Junco 45754.	Jan. 4, 1919.	Dec. 18, 1922.	4 "
N.[3]	Shufeldt's Junco 34830.	Dec. 20, 1922.	Oct. 31, 1926.	4 "
E.	Song Sparrow 47143.	April (1st yr.).	July (4th yr.).	4 "
N.[1]	Song Sparrow 11057.	Aug. 5, 1921.	Mar. 15, 1925.	4 "
N.[2]	Chewink.	1923.	1926.	3 "
L.	Cardinal 41898.	Mar. 12, 1917.	Mar. 28, 1921.	5 "
L.	Rose-breasted Grosbeak 49510.	May 25, 1919.	May 4, 1923.	5 "
B.	Brewster's Warbler 48866.	June 10, 1922. (adult)	June 6, 1926.[2]	5 "
L.	Myrtle Warbler 27290.	Feb. 28, 1917.	Mar. 1, 1921.	5 "
L.	Catbird 53471.	May 15, 1920.	May 25, 1923.	4 "
L.	Brown Thrasher 19247.	Feb. 27, 1915.	Mar. 28, 1922.	8 "
L.	House Wren 45303.	June 17, 1919.	June 6, 1922.	3 "
C.	White-breasted Nuthatch 48820.	Nov. 1, 1922.	Mar. 6, 1927.	5 "
C.	Chickadee 27143.	Jan. 22, 1920.	Feb. 7, 1926.	7 "
L.	Hermit Thrush 16246.	Feb. 13, 1917.	Feb. 23, 1920.	4 "
L.	Robin 33519.	July 8, 1917.	May 14, 1922. (approx.)	5 "

To summarize landbirds exclusive of Hawks.—We have 8 *years* for Chimney Swift, American Crow, Brown Thrasher; 7 *years* for Chickadee; 6 *years* for Blue Jay, White-Throated Sparrow; 5 *years* for Red-bellied Woodpecker, Tree Sparrow, Chipping Sparrow, Cardinal, Rose-breasted Grosbeak, Brewster's Warbler,[2] Myrtle Warbler, White-breasted Nuthatch, Robin; 4 *years* for Purple Grackle, Slate-colored Junco, Shufeldt's Junco, Song Sparrow, Catbird, Hermit Thrush; 3 *years* for Purple Finch, Chewink, House Wren.

Many of the figures given above must be still far below the

[2]While this paper is in press, T. D. Carter and R. H. Howland report May 30, 1927, Brewster's Warbler, 48866, and a female Hooded Warbler banded as adult July 4, 1923, placing these birds in the 6 years and 5 years classes respectively. A 9 year old Canada Goose is recorded in Bird-Lore (1927, p. 183).

normal age of the species concerned. Lincoln (1925, Auk. p. 364, 365) cites European White Stock of 11 years and Great Gray Heron of 9 years, and we have seen no comparable age data of such large American birds.[2] On the other hand, figures for the common passerine species (those which have been considerably banded) may be approaching the actual normal. Although he does no systematic banding, the writer banded in December 1923, and January 1, 1924, 14 House Sparrows, 2 or 3 of which, proving to be permanent resident individuals for the immediate vicinity of the banding station, were noticed casually to May 1925 or later. In the early months of the present year (1927) attempts to find even one of these birds have been unavailing, and it seems that one purpose of banding them, to obtain data on age of the House Sparrow, has been frustrated by too high a preconceived idea of that age. Four year Song Sparrows (another prolific species) are rarer in the records than one would expect if this were not near the normal maximum age, and very likely the House Wren is short lived.

RETURNS OF A CRESTED FLYCATCHER

BY MABEL GILLESPIE

Although banding is the infallible method of identifying individual birds, it sometimes happens that certain peculiarities of song or habit may also serve as identification marks for an occasional unbanded bird. This was the case with a male Crested Flycatcher that is now with us for the fifth year, a bird which was not banded until the third year of his appearance.

In May 1923, a pair of Crested Flycatchers chose for a nesting site a hollow fence-post which we had fastened to the side of the house for a winter feeding shelter. It was about five feet above the ground and five feet from a window in another housewall making right angles with the supporting wall. A sash curtain of sheer voile made it possible for an observer to watch the comings and goings of the pair without attracting their attention. After the fledglings were hatched, observations were made several mornings from dawn until breakfast time. Many days a camera was focused on the shelter with a thread leading from the shutter into the window.

The securing of satisfactory photographs required hours of patient waiting during which we became well acquainted with the pair.

When, in 1924, a pair of "Greaterests" again built in the shelter, we felt reasonably sure that it was the same pair. After three eggs had been laid, the female disappeared, having undoubtedly met death by accident.

In 1925 a pair of Flycatchers came to the shelter again. It was the male who brought the female, and when she finally built, it actually seemed as if she did so under compulsion. She possessed noticeably different habits than the other female. This year we banded both birds.

In 1926 the male again returned with an unbanded female who scorned the old nest shelter and built in a hollow tree an eighth of a mile away, where their nesting was unsuccessful.

In 1927 the male returned with an unbanded female and they are now nesting in the same old shelter site.

That the male has consistently returned to the nest shelter since he was banded in 1925, that no other male has been seen in the immediate vicinity, and that the shelter is such an unusual place for a Greaterest to choose for a nesting site, all indicate beyond reasonable doubt that it was the same male in 1923 and 1924. This male was banded in a manner to make it possible to identify him at sight and to avoid confusing him with any other male banded as a fledgling in 1923 or 1925.

Observation of the females each year showed marked differences in the females of 1924, 1925, 1926 and 1927. The females of 1923 and 1924 had a marked similarity, and it is quite probable that it was the same female both seasons and that the pair of 1923 repeated in 1924.

A comparison of the nesting data for the five years follows:

Nest Building Began		Eggs Laid*	Fledglings Hatched	Left Nest
1923	May 26	June 2 (5 eggs)	June 19	July 4
1924	May 29	June 7 (3 eggs)	Female disappeared	
1925	May 28	June 5 (5 eggs)	June 22	July 5
1926	Seen nesting May 29			
1927	May 27	June 4 (6 eggs)	June 22	?

* The eggs were laid in early morning on successive days, the date given being the day the first egg was laid.

The most striking fact about these nestings is the *persistency* of the male in returning to the same nesting site each year. We hope there may be other observations in time which will indicate whether this is characteristic of the species or simply of an individual. Also of interest is the fact that the female apparently made the final decision. Three times the choice of the male was accepted without apparent objection; once the female seemed reluctant to follow his choice, and once she refused.

The above record of the male Greaterest shows that he is now at least five years old.

Glenolden, Pennsylvania, June 24, 1927.

THE PROTECTION OF GROUND NESTS WHILE UNDER OBSERVATION

BY KATHARINE C. HARDING

For the past three years we have spent the month of June at a camp in New Hampshire, where I had an excellent opportunity to observe a large variety of nesting birds, at the height of the breeding season. The first two summers, I found it exceedingly difficult to study the Veeries (*Hylocichla fuscescens fuscescens*) and other ground nesting birds, owing to the fact that their eggs and young were so frequently destroyed, before the records of the period of incubation and growth of the fledglings were completed. Frequent visits to the nests appeared greatly to increase the chances of their destruction. Hoping to solve this problem, I decided in 1926 to try two new ways of safe-guarding the nests.

First of all, upon finding a nest I immediately looked for an "Observation Post"—preferably a rock or a stump from which I could look into the nest without actually going close to it, on my daily visits. This method worked satisfactorily and in several cases I was able to follow the history of the nest, until the fledglings were ready to band.

When a nest was concealed or no observation post was available, I used a different scheme. Placing a strip of dark green cambric, nine feet long and two feet wide, in water, I soaked it until the dye stopped coming out. Then every morning before starting out, the cambric was again placed

in water and wrapped up in a piece of corduroy. When I was within nine feet of the first nest, one end of the strip was laid on the ground, and standing on it, I began unrolling the cambric and walking forward upon it at the same time until I reached the nest. After I had examined its contents, I retraced my steps, picked up the miniature carpet and dowsed it thoroughly in the lake before going to the next nest.

This method was used most successfully for all close-range observation of five Veeries' nests, one Oven-bird's nest, one Chestnut-sided Warbler's and a Black-throated Blue Warbler's nest. These eight broods all left their nests safely to the best of my knowledge, while four other ground nests (three Veeries' and one Warbler's) which were visited only once without the use of the wet cambric, were robbed overnight, probably by some prowling animal which followed the scent of the footsteps leading to the nests.

This precautionary measure was not infallible, however, as one clutch of Black-throated Blue Warbler's eggs and a brood of three day-old fledglings vanished mysteriously. Both nests were in exposed positions, however, and Crows or squirrels may have been the culprits.

The cambric was particularly useful in observation work from a blind, and for two weeks I approached a Veery's and a Black-throated Blue Warbler's nest, at least once a day and frequently more often.

If any similar way of protecting nests is already in use, I should be very glad to hear of the results obtained. Also I hope that other observers may be interested in trying this device and reporting whether they find it has any real merit in safe-guarding ground nests under observation.

94 Westbourne Terrace, Brookline, Mass.

THE LURE OF BIRD MIGRATION

BY HARRY C. OBERHOLSER

THE attractiveness of the study of bird migration arises from more than one circumstance. In the popular mind the migration of birds derives much of its charm from its mystery; and while to a considerable degree this is the attitude also of the seeker after knowledge, it is likewise true that were all the facts of migration known, our present interest in its mys-

teries would undoubtedly turn to an increased and equally eager admiration for the birds and their accomplishments. The unknown concerning bird migration falls into two categories: the facts relating to the subject, and the causes of these. One of the chief attractions of all kinds of bird study is the pursuit of information; and we know relatively so little about our feathered friends that the reservoir of unknown things has not been appreciably lowered by what we have discovered. The gathering of facts about anything is of course much easier than the determining of the causes of these facts.

So far as bird migration is concerned, some of the knowledge that has already been gained is so intriguing that it greatly increases the desire to learn more, indeed, it often suggests other lines of inquiry. Some of these facts are among the most astonishing things known about birds.

For instance, migration itself, with all its complexity, is one of the most astounding kinds of bird activity. One of the factors that enter into this is the great length of the journey performed by many birds. The travel of a tiny bird from the Arctic regions to the south temperate zone over thousands of miles and return each year is something to astound even a casual observer. Furthermore, in pursuing these annual journeys many birds make long individual flights, at least from 600 to 2,500 miles, and these flights are not confined to the birds that we commonly think of as powerful flyers, for even the small Warblers and Thrushes travel across the wide open stretches of the ocean for hundreds of miles. The difference in the length of the route followed by various species is also a remarkable circumstance. Still more so is the roundabout route taken by some species, such as the Cliff Swallow, the Ross's Goose, and some of the Scoters; and in the same category is the well-known and frequently mentioned case of the Golden Plover which moves southward along the eastern coast to South America, and back again through Central America and the middle United States. Long years of observation have shown that the appearance of migratory birds on both their northern and southern journeys is remarkably regular, and this consistency of travel challenges our admiration as well as our interest. Again, the times at which birds migrate are so different that we almost unconsciously speculate on the causes of this. Some birds begin to move southward from their summer home as early as July, at times even in June; and others do not start until two or

even three months later; while a similar condition exists in the spring movements. One would think that all birds would of course fly by day when they could see their way and more easily obtain food, but, as is well known, hosts of birds travel at night, even when it is darkest and most stormy. Furthermore, the young in many instances begin their migratory travels before their parents, over a route that they never have traveled, and without guidance of other birds. Yet in spite of all this, except for untoward accident, they unerringly find their way for thousands of miles to the south, to spend the winter and return to us again in the spring, often to the same spot.

Much more progress has been made in the discovery of facts regarding bird migration than in working out the causes of the various phases of these movements. However, there are multitudes of problems of observation which still need solution and which will keep observers busy for many lifetimes. In fact, there will practically always be something left unknown.

Some of the problems of bird migration upon which much more light is needed, particularly regarding certain individual species, are those which might be considered the mechanics of migration, that is, the times and methods by which they perform the various parts of their journeys. Also whether the young, the males, and the females travel together or separately, and which arrive earliest in spring or autumn, as the case may be. Another interesting line of inquiry is the effect of the weather, particularly of storms, on the movements of birds.

The solution of some of the problems of migration relating to the causes of these movements is much more elusive than the facts themselves, and requires decidedly more careful, long continued, and patient study. Probably we shall never fully know some of them. Among the most attractive of these are the problems that relate to the causes of migration itself; and there are many other questions that we should like to ask of ourselves as problems for solution. Why do birds pursue circuitous routes? Why are some of these routes changed from time to time? Why do some birds migrate northward while the majority go southward? Why do some individuals of certain species migrate northward and some southward to winter? Why are the migratory routes of some species narrow, while others are broad? Why do some species stop frequently by the way, while others go

over wide areas of both land and water without stopping? Why do some pass by one route and return by another? Why do some small birds fly over water, instead of making a comfortable journey by easy stages over land? Why do the young in certain cases precede the parents? Why do birds fly at night instead of by day? And many more.

And finally, to puzzle and attract us, there is that probably greatest problem of migration, how the birds find their way through darkness and through storms over wide expanses of land and water to a far distant home without guidance other than an inherited instinct. This element of bird migration alone would serve to make it one of the most alluring phases of ornithology.

PURPLE FINCH AND CATBIRD RETURNING RATIOS

BY CHARLES L. WHITTLE

In this Bulletin for July 1926, p. 48, paragraph 2*, attention was called to the increasing returning ratios of Purple Finches (*Carpodacus p. purpureus*) from year to year as the birds advance in age. These ratios are doubtless connected with the numbers of birds surviving from year to year, though how accurately they represent the survival ratios will only be known after many such investigations have been made. From this article I quote part of the table on page 49:

PURPLE FINCH RETURNING RATIOS

(1924—June 5, 1926)

Year of Banding	No. Banded	Returns-1	%	Returns-2	%	Returns-3	%
1923	166	25 (1924)	15.06	17 (1925)	68.00	10 (1926)	58.82

As the majority of the returning birds for the Peterboro station have now (June 13, 1927), been recorded for the current year, it is interesting to note the continually increasing percentage of returns-4 over the percentage of the returning birds in 1926, namely 58.82 percent. Seven of the ten returns-3 in 1926 are back this year, or 70 per cent. Of these seven

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* "Returning Ratios in Their Relation to Annual Mortality Among Birds" by Charles L. Whittle and Helen G. Whittle

returns-4, one at least is six years old, a male, No. 66834, banded as such May 15, 1923. The other six birds are males and females of undetermined age, but they are all of course at least five years old, the banding dates (early May) precluding the existence of birds in juvenal plumage.

It is also of interest to prepare a similar table showing the returning ratios of Catbirds (*Dumetella carolinensis*) taken at Cohasset, Massachusetts, up to July 2, 1927, as follows:

RETURNING RATIOS OF BANDED COHASSET CATBIRDS*

(1923 to July 2, 1927)

No. Banded	Year Banded	Returns-1	%	Returns-2	%	Returns-3	%
7	1923	2 (1924)	28.57	2 (1925)	100.00		
11	1924	5 (1925)	45.45	3 (1926)	60.00	2 (1927)	66.66
15	1925	3 (1926)	20.00	3 (1927)	100.00		
19	1926	7 (1927)	36.84				

This table shows that of the seven birds banded in 1923, two returned in 1924, and that 100 percent of the returns-1 of 1924 were returns-2 in 1925. The history of those banded in 1924 is more complete, the figures again showing high and increasing returning ratios with increasing age. Of the five returns-1 in 1925, three were returns-2 in 1926, and of these two were returns-3, in 1927,—45.45, 60.00 and 66.66 per cent respectively.

WILSON'S PETREL IN THE WEST INDIES

BY STUART T. DANFORTH

THE Wilson's Petrel (*Oceanites oceanicus*) is such an abundant bird in its breeding grounds on the Antarctic islands and in its range during the Antarctic winter off the American coast that it seems rather surprising that there are so few records of its occurrence in the region separating its breeding and winter ranges, across which it must migrate twice a year. Records of its occurrence in the West Indies are few

* Of the twelve returning birds during 1927 (up to July 2nd), two are sight-returns-2, and six are sight-returns-1. All twelve were adult birds when banded.

and far between. The only definite record which I can find for this region is that which Wells gives of a bird obtained before 1887 near Grenada, where he believed the species to be common. He also recorded it from the neighboring island of Carriacou. There is also an uncertain record of some Petrels which Newton believed to be this species which he saw between St. Thomas and St. Croix on June 14, 1858. Gosse gives a record of a Petrel blown ashore in Portland, Jamaica, after a storm in the autumn of 1846, which may have been this species. These three records, two of them admittedly indefinite, are the only West Indian records that I have been able to discover. Therefore it gives me pleasure to be able to report that on May 9, 1927, while I was passing from Desecheo Island to Porto Rico on a small fishing sloop I made a very satisfactory observation of a Wilson's Petrel about two miles west of Rincón Point, Porto Rico. It was flying straight northward, keeping just above the waves, and passed very close to the boat. I believe this to be the first record for the Porto Rican region, and one of the very few West Indian records.

College of Agriculture, University of Porto Rico,
Mayagüez, P. R.

SOME 1927 RETURNS AT ROCK, MASSACHUSETTS AND THE INFORMATION THEY CONVEY

BY A. W. HIGGINS

Song Sparrow (*Melospiza m. melodia*)

On May 23, 1923, I banded my first bird of this species with band 25933. The bird, an adult, nested near my station during 1923, and it was a return-1 April 1, 1924; a return-2 April 1, 1925; a return-3 in 1926, on April 23rd; and this year, 1927, the bird was a return-4 on March 20th, and is accordingly at least five years old.

Purple Finches (*Carpodacus p. purpureus*)

Although there are several banders, four in fact, in the town of Middleboro (in which Rock is situated), all operating stations about six miles northward of mine, only one bird

banded by them during a period of five years has been recovered by me, this case being a male Purple Finch No. 40165 banded by Alice B. Pratt, May 11, 1923. At that time the bird was in olivaceous plumage and was banded as a probable female, but when recovered by me, May 6, 1924, the bird wore the purple coat of the male. We accordingly know that it was born in 1922, and wore the colors of immaturity when first banded. During the nesting season of 1924, No. 40165 stayed about my station and mated with No. 127424, nesting in my only spruce tree. On April 5, 1925, he returned and nested again in the same spruce with a new mate, 155133. I did not take him in 1926, but this spring he returned on April 26th with still another new female. He is now five years old.

On May 2, 1926, I gave band 167187 to a male Purple Finch and on the 9th I banded a female (167190) which mated with 167187 and they raised one brood of young in my spruce tree, and a second brood in an arbor vitae, the nest being placed about forty feet from the ground. The first brood of three was banded. Both these parent birds returned this spring as mates, apparently coming together, as I trapped the female, 167190, on April 15th and the male, 167187, on April 18th. That they were mated was determined by the fact that I saw them acting as mates near my trap when they both entered the trap and were captured. Later I took them again at the same time.

Phoebes (*Sayornis Phoebe*)

In this Bulletin for October 1926, pp. 81 and 82, I published a partial nesting history of a pair of Phoebes, 155135 (♀) and 155134 (♂). These birds were banded on April 18, 1925, as mates, both returning in 1926 to the same spot as mates, and now they are back as returns-2 mated for the third season, the male appearing on March 13th, the female appearing six days later, the nineteenth of March. Each year they have come in the same order,—1925, male ten days ahead; 1926, male seventeen days ahead of female. In 1925 and 1926 the female used the same nesting place (and the same nest with additions), but because of being disturbed this year the birds chose a new place further under the barn. I catch the birds in the dark with the aid of a flash-light. They have raised two broods each year.

June, 1927.

PLUMAGE VARIATIONS AND PLUMAGE CHANGES AMONG EASTERN PURPLE FINCHES

BY CHARLES L. WHITTLE AND HELEN GRANGER WHITTLE

THE movements of the Eastern race of Purple Finches (*Carpodacus p. purpureus*) even at nesting time seem inscrutable, and their variations in color, if they are indications of sex, are also puzzling.

At our banding stations in Peterboro, New Hampshire, and Cohasset, Massachusetts, during the last five years, we have banded about two thousand birds of this race. Early in the work we came to recognize that the most variable parts of the plumage of the olivaceous birds (excluding birds in juvenal plumage), females and immature males, were the rump feathers and upper-tail coverts, especially the former. The two most frequent and most obvious differences in the coloration of these parts lie in their yellowness, that is in the feebleness or intensity of this color, so that we came to divide most of the olivaceous birds referred to into two classes—(1) those "especially yellow-olive" (abbreviated into "EYO" in our bird journals and on our individual record cards), and (2) birds not showing this coloration conspicuously were dubbed "not especially yellow-olive" (abbreviated into "NEYO"). These designations refer to the rumps exclusively. Other much less frequent colorations of the rump among olivaceous birds which received systematic attention were described as "Pallid," "Rosy," "Brown," and "Reddish-brown," "Mixed Yellow and Brown," "Mixed Rosy and Yellow," etc.

These variations in the rump colors of olivacecus birds have served as a basis for studies of their relations to sex, age, seasons of the year, etc., in an attempt to ascertain if they afford criteria by which it would be possible accurately to identify by sight alone young males in their first nuptial plumage and females of corresponding age and older.

We have been able in a number of instances to note changes taking place in rump coloration of the same birds from year to year, for periods of four to five years, in fact in all we have seven birds which up to this season (April, May and June,

1927) have returned to our Peterboro station for the fourth time (Returns-4)*.

In cases where olivaceous birds assumed rosy rumps, with or without yellow-olive patches forming part of the rump feathers, other portions of the plumage were also usually rosy or contained rosy feathers, notably the crown, nape, chin, throat, and the tips of the greater coverts.

It was also early noted that the percentage of Purple Finches captured showing EYO characteristics reaches a maximum during April and May, and a minimum during the winter months. For example, of three hundred and thirty-nine birds banded in Cohasset, Massachusetts, from January 1, 1927, to May 1, 1927, eighty-five being males in "Rosy" plumage, one hundred and ninety-nine were NEYO, twenty-five were EYO and thirty had brownish, brownish-red, or reddish rumps, the ratio of EYO to NEYO being approximately 1 to 8. On the other hand, of forty-six new birds banded in Peterboro, New Hampshire, between April 16 and May 2, 1927, fifteen were NEYO, thirteen were EYO and eighteen were males in "Rosy" plumage, or an EYO ratio to NEYO of approximately 1 to 1. During a comparable period, twenty-eight returns were recorded in Peterboro (Returns-1 to Returns-4), and of these, omitting eighteen rosy males, four were NEYO and seven were EYO, a ratio of EYO to NEYO of approximately 2 to 1. A great preponderance of EYO birds captured in Cohasset during the same period was also noted.

In order to investigate several of the problems raised by the above statistical study, a representative series of rump feathers from olivaceous birds was collected by plucking several feathers from each bird studied and mounting them immediately between two glass slides, the mounts being studied at once in order to obviate possible fading, a low-power microscope and a high-power lens being used. In addition we obtained mounts of rump feathers from rosy males ranging in age from approximately two years to at least

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* As it has seemed necessary to give a name to a record of a bird banded at a station to which it returns another season after having made one or more migrations to and from its wintering or summering area, we have used exponents above and following the word return to indicate the fact and the number of times a bird has returned, thus: "Return^1, Return^2", etc. (see The Auk, Vol. XLI, p. 329, footnote). As these exponents are likely to be confused with reference numbers to footnotes, we now write the figures on the same line as the word return, and connect them with a hyphen, thus: Return-1, Return-2, etc. Recoveries may be designated in the same manner, thus: Recovery-1, Recovery-2, etc., in cases where a bird banded at one station is trapped at another station for one or more times, migrations as above indicated intervening between takings in each case.

six years, one instance being a Return-4 banded as an adult male May 3, 1923, then at least two years old.*

Similar sets of feathers were also taken from EYO birds ranging in age from one year to five years or more. Ridgway, whose detailed description of this race based on thirty skins, makes no mention of the greater olivaceousness of the rumps of some birds, but Coues† describes the upper parts of females and young as "olivaceous-brown, more clearly olivaceous on the rump."

Magee writing in *The Auk*, Vol. XLI, pp. 606-610, 1924, makes numerous references to plumage colorations, stating his belief that bright crimson males are at least four years old. Also that "The shadings on rump vary much more than the balance of the plumage—from rump as dark as back with no yellowish, [our NEYO birds] to rump considerably lighter than back with no yellowish [probably our pallid coloration], then from rump with just the faintest yellowish tinge (so faint in some you are doubtful if there is any) to a very distinct and bright yellowish olive [our EYO birds]. I am pretty well satisfied that the darkest birds showing no yellowish are old females and those at the other extreme with bright yellowish olive rumps are young males," p. 608.

The classical paper by Dwight on Molts‡ brings out the fact that the brightening of the feathers of the adult male Purple Finch at nesting time is caused by the loss of barbules by abrasion, giving rise to the "bright rosy carmine" feathers of the adult nuptial dress. This brightening of the plumage Dr. Dwight states is not a pigmentary change, but is due to the loss of the whitish barbules, leaving the rosy barbs bare

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* In a recent paper by M. J. Magee entitled "Summary of Trapping and Banding Operations in Northern Michigan", Wilson Bulletin Vol. XXXVIII, No. 3, p. 164, the following occurs:

" 'The Crimson plumage [of the Purple Finch] is not acquired until the bird is at least a year old, and in many not until at least two years old.' " "Many young males trapped in the spring acquire the adult plumage by fall."

He cites the case of No. 58864, stating that it was banded May 12, 1923 as a young male or female, showing no "crimson color" the following September, but as a return on May 7, 1925, it was in adult male plumage. This record gives the data on which he determined the age of the bird when it assumed its "Rosy" plumage, namely at the first postnuptial molt. He is less specific in submitting evidence that male Purple Finches acquire rosy plumage at the partial postjuvenal molt, that is when they are three to four months old. Our experiences at Peterboro and Cohasset contravene Mr. Magee's conclusion in this latter respect, and confirm his observations illustrated by No. 58864 if this bird on as early a date as May 12th was indeed in juvenal plumage. Up to 1927 we have banded approximately two hundred and fifty Purple Finches in juvenal plumage and of these a fair proportion returned the following year, but in no instance as an adult male.

† Key to North American Birds". Fifth Edition, Vol. I, p. 381.

‡ "The Sequence of Plumages and Moults of the Passerine Birds of New York" by Jonathan Dwight, Jr. Annals N. Y. Acad. Science, Vol. XIII, Part 1, Oct. 19, 1900, pp. 73 to 345 and accompanying plates.

and glistening. He states that this process of intensifying the rose color is "wholly an optical delusion" (p. 174), a statement quite at variance with our view of the phenomenon, which appears to be very real and entirely due to removing from the barbs the dark-gray barbules which tend to give them when present a more pinkish tone.

As Dr. Dwight appears not to have studied the effect of a similar loss of barbules at nesting time as affecting the *yellowness* of Purple Finches not adult males, we have a justifiable reason for publishing the following observations, based largely on a study of rump feathers taken from olivaceous birds, in part of known age, and a few rump feathers collected from old males of varying ages up to at least six years.

The barbs of the rump feathers of olivaceous Purple Finches range in color from nearly white through very pale olive-yellow to olive yellow. Less frequently they are glistening primuline yellow. In no unusual cases (see detailed description of 83998 below) a bird may possess a rump with olive-yellow feathers indiscriminately mixed with rosy feathers, or the two colors may be segregated. These colored barbs determine the rump coloration almost exclusively during April and May. After the postnuptial molt, these colors in the new barbs are commonly masked more or less by silky-white to gray or dark-gray barbules, the rumps usually becoming NEYO.

The intensity of the olive-yellow color varies in different birds as already stated, and the *area* of the feather so colored also varies, both appearing to reach a maximum in old birds. In nearly all rump feathers examined the color of the barbs of both olivaceous birds and of rosy males decreases gradually from their tips to zero at the union with the rachis, and they also successively decrease in color to zero at the union of the pennaceous and plumulaceous portions of each web.

Under low magnification the rump coloration of NEYO birds is found to be due to the presence of smoky-gray barbules occuring quite to the tip of the barb, hiding the barb color, the barbs varying in color in different birds, as stated above, and at different ages, as shown below.

The intensity of the rump coloration in EYO birds is due to the yellowness of the barbs, the area covered on each feather, i. e. the number of the yellow barbs, and the number of barbules lost or broken, the two types of rump coloration intergrading.

In cases where the rump is pallid, the lens shows light-

colored to nearly white barbs, the pallid effect obviously increasing with the loss of barbules.

Other rumps vary in color from brownish to brownish-red to rosy, in solid colors, intermingled colors, or in patches of solid color. A series of mounts of such feathers show (1) that a pale brown rump is due to pinkish-brown barbs largely masked by little-abraded very dark-gray barbules, the colored areas being small; (2) that a brown rump is due to reddish-brown barbs partially masked by dark-gray barbules, both showing little abrasion, the colored areas often being one-fourth by one-fourth inch across; and (3) a reddish-brown rump is due to loss of barbules when the barbs are reddish-brown or to feathers with rosy barbs partially masked with dark barbules.

A few rosy or crimson feathers are not confined to old male-(as pointed out by Magee*) but are occasionally found plentis fully on females if the accepted view be true, namely that male Purple Finches become rosy when they assume their second winter plumage. The rosy feathers from such rosy-rumped females vary in color from pink in some examples to crimson in others, the terminal four to forty barbs carrying most of the color, often being highly and uniformly colored even to their junction with the rachis. The yellow-olive feathers associated with such crimson ones are usually of a particularly intense color also.

Several examples follow giving details of plumage changes taking place on the same bird during a series of years.

Purple Finch No. 83998, banded as an EYO bird June 15, 1924, a return-3 at Peterboro, N. H., in 1927. Rump on May 14, 1927, dull rosy with central patch of rich olive-yellow feathers. As a return-1 and a return-2 the rump continued to be plain EYO, but as a return-3 the rump showed a large area of rosy feathers. This bird is at least four years old and is a female.

Purple Finch No. 66881, banded at Peterboro, N. H., July 15, 1923, a return-4, May 1927, a female. Rump coloration not observed when banded. As a return-1, July 5, 1924, rump was EYO. As a return-2, on May 31, 1925, rump was reddish-brown. As a return-3, May 15, 1926, rump was NEYO. As a return-4, May 9, 1927, rump was NEYO. This bird is at least five years old.

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*Loc. cit. p. 165. Magee says, regarding the occurence of rosy feathers on female Purple Finches: "A reddish-feather or two does not necessarily mean that the bird is a young male."

Purple Finch No. 66858, banded at Peterboro as an olivaceous bird, June 30, 1923, a return-4 May 14, 1927. As a return-1, July 20, 1924, rump was NEYO. As a return-2, rump was EYO. As a return-3, rump was NEYO. As a return-4, rump was reddish-brown. This bird is believed to be a female and is known to be at least five years old.

Purple Finch No. 92256, banded as an olivaceous bird April 28, 1924, by Conover Fitch at Cohasset, Massachusetts. A recovery-1 at our Cohasset station on March 14, 1925, with rump extremely brown. A recovery-2 May 9, 1926, an EYO bird, and as a recovery-3 April 27, 1927, the rump was NEYO. Later, in May 1927, the bird repeated, showing a clean, polished band—additional evidence that it is a female, since rosy males have never been taken by us wearing bands polished by rubbing against the eggs during incubation*.

Purple Finch No. 92271, banded as an olivaceous bird May 18, 1924, by Conover Fitch in Cohasset, Massachusetts, and hence now at least four years old, an adult male. Recovered at our Cohasset station three successive years (a recovery-3). Rump feathers showed complete loss of barbules for about one-fourth inch, bringing the crimson barbs close together, resulting in a rich crimson color. The under-tail coverts were rosy-tipped. This character is met with to a varying degree in the older males and appears to be at a maximum in birds five to six years old.

Purple Finch No. 41909, banded at Cohasset, Mass., as an adult male May 3, 1923, a return-4 May 18, 1927, and hence at least six years old this month (June 1927). Feathers from rump and undertail coverts studied. Rump feathers are remarkable for the intensity of crimson color which involves for their entire length twenty barbs on each side of the rachis. For a distance of one-fourth inch from the tips of the feathers there is a nearly complete loss of barbules. The vivid crimson also extends to the extreme tips of the little-abraded barbs, and the tips of the under-tail coverts show considerable abrasion and a total lack of the rosy color at the tips of each barb, as if depigmented.

By transmitted sunlight the crown feathers of male Purple Finches when elevated are crimson throughout the year, except during the molt. In case of very old males, like 41909, by the combined increase of the colored area of barbs and the

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* In this Bulletin for July 1925, p. 52, a note was published on "Polished Bird Bands" by Charles L. Whittle.

increased intensity of their crimson coloration as exposed by abrasion, the birds as a whole have a marked crimson aspect, so conspicuous indeed that under favorable light conditions they can often be distinguished, even at a distance, from young adult males, at least during April, May and June.

From the above considerations, it is believed to be highly probable (1) that a preponderating percentage of olivaceous birds with EYO, rosy, or brown rumps, or with mixtures of these colors are old females; (2) that the majority of the birds (omitting those in juvenal plumage) having NEYO rumps are young males and young females in first winter plumage.

Little has been said about Purple Finches in juvenal plumage since the perfection of their feathers, their softness and their generally more buffy coloration, particularly the wing bars, etc., serve to distinguish them from older birds.

Our observations strongly indicate that in New England adult male Purple Finches in moving to their nesting grounds precede the old females in the main, though closely followed by the latter, and that the old females arrive earlier than the main body of the migrants. These conclusions are indicated by the following twenty-eight returns already mentioned, taken in Peterboro between April 30 and May 20, 1927:

Adult Males			17
Eyo birds	7	All at least two years old	
Neyo "	4	and hence females	11

Each season the first Purple Finches seen are rosy males, and Magee reports this to be true at his banding station in northern Michigan.

In Cohasset during the corresponding period in 1927, twenty-four returns were recorded, made up as follows:

Adult Males			10
Neyo birds	1	All but one at least two	
Eyo "	13	years old and hence females	14

Compare these records with the birds banded in Cohasset during the last two weeks of migration:

Adult Males	1
Eyo birds	4
Neyo birds	26*

The Peterboro records for a comparable period are closely similar.

Cohasset, Massachusetts, June, 1927.

* Our Peterboro station, which is situated approximately seventy miles northwesterly of our Cohasset station, is operated from about April 1st to about November 15th each year, no Purple Finches wintering there. Hence the appearance of the birds in the spring as migrants is most obvious. In Cohasset, however, the station is in operation throughout the year and Purple Finches are banded every month, the fewest in June and the largest number during February, March and April. These conditions make it difficult at times to distinguish between migrants and seemingly permanent residents. As would be expected the migratory movement north arrives in Cohasset considerably earlier than it reaches Peterboro.

GENERAL NOTES

The "Rawson-MacMillan Field Museum Expedition" to Band Birds.—Your Secretary has perfected arrangements whereby the forthcoming Rawson-MacMillan Field Museum Expedition to Labrador and Baffin Land will include bird banding as a part of its scientific investigations. Captain Donald B. MacMillan will take with him five thousand bands which the Biological Survey is now having made for him.

For several years Captain MacMillan has been one of Mr. E. H. Forbush's most trustworthy observers, and on this expedition he will personally take part in the banding work. A letter received from him on June 11, 1927, written at Freeport, Maine, contains the following details of his plans:

> "We are leaving Wiscasset, Maine, on June 25th to cruise beyond the Arctic Circle following the Labrador and Baffin Land coasts. About September 1st we shall proceed south to Northern Labrador and there establish a permanent scientific station near the Eskimo village of Nain. Our banding will be done next June and July, 1928, on the young of the Glaucous and Great Black-backed Gull, Eider Duck, Coot, and Canada Goose especially."

A scientific staff will accompany him, consisting of Alfred C. Weed, Ichthyologist; Dr. Duncan D. Strong, Anthropologist; Sharat K. Roy, Geologist; Arthur S. Rueckert, Zoologist; Charles Sewall, Botanist; and Novio Bertrand, Taxidermist.

At a meeting of the Council of this Association held at the State House on June 7, 1927, Captain MacMillan, who will be in charge of the expedition, was elected a Vice President of the Northeastern Bird Banding Association, and as a member of this Association he will of course deposit copies of his banding records with our Recording Secretary.

A Partial Record of the Nesting of the Kingfisher.—On May 30, 1925, we found the nesting hole of a pair of Kingfishers (*Ceryle alcyon*) about a mile from Lake Asquam, New Hampshire, in the Town of Ashland. On May 31st, my husband, following the advice of Mr. Charles J. Maynard, made an opening into the nest cavity from a pit opened from the surface to a point about six inches in the rear of the nesting passageway. When we had counted the eggs, seven in number, we filled the hole with sand and loam. The next time we visited it we found that some animal had dug through our filling material and destroyed two young birds. After this we put some big rocks into the opening, chinked them with pine needles, and replaced a couple of shovel-fulls of earth to finish off with.

Each of the five times we examined the nest the rocks, etc., had to be removed and replaced. If rocks are not used, skunks or other animals may dig out the soft earth and eat the young birds. A large bag of mosquito netting was placed over two saplings in front of the hole before the nesting hole was opened, the female immediately rushing out into the bag. She was then photographed and banded, No. 213220.

On June 13th the eggs were pipped, and on June 22nd the five remaining fledglings were banded, then nine days old. Their fat bare bodies and "flippers" of wings without any natal down gave them a most fantastic appearance. Their beaks were enormous and their eyes were not yet open.

On the fifth of July, when the young Kingfishers were twenty-three days old and were in nearly full juvenal plumage, we took the photograph

shown on the front cover of this number of the *Bulletin*. At this age they are very active and alert. They even made ludicrous efforts at "rattling," like their parents and seemed ready to leave the nest very shortly.—KATHARINE C. HARDING, May 30, 1927.

Minute Observations on the Manners of Birds.—Possibilities of studies of the *manners* of birds are opened up by bird-banding, and ought to draw from bird-banders more accounts of the little superficial ways that are so interesting and picturesque and help in gradually building up a better understanding of the psychology of birds. In the last number of the *Bulletin*, Mr. Forbush, after listing problems for attack, touched on the point that I am speaking of in his closing paragraph: "The individuality of birds, i. e. the difference in the temperament, habits, etc. of individuals". Mrs. Robinson gave an example in the same number in her vivid, picturesque account of the relations between nesting Chipping Sparrows and Tree Swallows. I like to keep creatures in confinement a few days to familiarize myself with their attitudes—if nothing else; and some feeding and banding stations afford opportunities scarcely less favorable for minute observations than captivity affords.

I would instance the case of a Hermit Thrush that I banded during the severe snow-storm of April 19, 1925. It might almost be assumed to have been grateful for care in captivity at that time. Its gentle beauty disinclined me to free it for some days, and it fulfilled my expectation of a winning personality in its perfect elegance. This Thrush did at first, it must be confessed, display alarm at the great bulk of a human being just on the other side of the wires, but it soon discovered that it could spend its time placidly in the midst of abundance, with none of the perils of the wild to startle it,—at least so I interpreted its adaptability. Then in place of thrashing wildly, it adopted an amusing systematic exercise,—a circuit of the cage done at speed, springing up from the floor to perch after perch in succession, over, across, down, and so on over and over again. The cage was almost three feet square. Every position of the bird was graceful, so that it was fascinating even in its quietest moments. A favorite pose was cocking up the tail like a Wren and holding the wings slack. It ate with avidity—nuts, corn-meal, house-flies, cheese, butter, grape-fruit, and strawberries. Its prevailing note was the pleasing, clear, uninflected whistle of deep tone, "tōōp"; variations of this note were a sharpened version like a Hyla's cry, and a sweet, scarcely audible "tyōōk". This "Tyōōk" might be said in turn to be akin to the less musical "chēōōk" which this bird also gave. On two occasions when I was by, it indulged in singing, and never was a song more exquisite; this was as perfect as when ringing through the forest, but was given in a tone so soft that I strained my ears to listen, as if to a bird far off. The sixth morning the Hermit awakened me very early, with a louder, sharper version of its whistled call, through two closed doors, and it meant business, for it reiterated this note with a fierce insistence until freed. I imagine that another of the race had communicated with it from outside.—F. B. WHITE, Concord, New Hampshire.

Some Additional Bird Weights.—In this Bulletin for April 1926, pp. 33-36, the weights in grams of a considerable number of species were published, the number of individuals weighed being too inadequate, how-

ever, to furnish average weights of species or sexes, the Purple Finch receiving most attention.

In the following tabulation a series of weighings of larger birds, such as the Robin, Catbird, Rose-breasted Grosbeak, White-throated and White-crowned Sparrows, not previously published, are included, and also the weights of two species of the genus *Spizella*,—the average weight of fourteen *passerina*, 13.00 grams, and one *pusilla*, 12.00 grams. Where the sexes are known their weights are given separatelv, and as species.

In the first paper the average weight of forty-five Purple Finches was given as 25.79 grams. In the table below the average weight of 326 birds of this species is found to be 23.89 grams, doubtless a more accurate figure. The average weight of seven Song Sparrows (see footnote p. 34) was given as 24.28 grams, but the results of weighing twenty-nine of this species is an average of 22.52 grams. Twenty-two Chickadees averaged 11.92 grams, and thirty-nine average practically the same, 11.72 grams. These latest figures of larger numbers of birds show that individual variations in weight are too great to determine correct averages from weights of a small number of birds. The Chickadee, however, seems to be an exception to the rule.

The tabulation follows:—

	Sex	No. Weighed	Average Weight Females	Average Weight Males	Average Weight Both Sexes
Phoebe (*Sayornis phoebe*)		1			20.00
Chebec (*Empidonax minimus*)		1			9.75
Purple Finch (*Carpodacus p. purpureus*)		326			23.89
White-crowned Sparrow (*Zonotrichia l. leucophrys*)		4			34.12
White-throated Sparrow (*Zonotrichia albicollis*)		11			28.68
Chipping Sparrow (*Spizella p. passerina*)		14			13.00
Field Sparrow (*Spizella p. pusilla*)		1			12.00
Slate-colored Junco (*Junco h. hyemalis*)		13			21.00
Lincoln Sparrow (*Melospiza l. lincolni*)		1			21.00
Song Sparrow (*Melospiza m. melodia*)		29			22.52
Rose-breasted Grosbeak (*Zamelodia ludoviciana*)	♂	6		46.83	48.27
Rose-breasted Grosbeak (*Zamelodia ludoviciana*)	♀	7	49.50		
Catbird (*Dumetella carolinensis*)		15			39.05
Chickadee (*Penthestes a. atricapillus*)		39			11.72
Robin (*Planesticus m. migratorius*)	♂	3		71.66	
Robin (*Planesticus m. migratorius*)	♀	2	73.00		72.196

C. L. Whittle.

Two New Chipping Sparrow Age Records.—The answer to the question: How long do birds live? is in the way of being answered. Mr. Edmund P. Brown of Belfast, Maine has a return Chipping Sparrow banded June 19, 1924 as an adult. It returned in 1925 and a second time on May 23, 1927, when it was at least four years old. Its history came to a tragic end on that date when it was killed by a cat.

A second Chipping Sparrow record was sent E. H. Forbush by M. J. Magee of Sault Ste. Marie, Michigan, who on May 17, 1927, took as a return a bird banded July 15, 1923, now at least five years old.

J. T. Nichols in this number of the *Bulletin* cites a record, published by F. C. Lincoln, of a bird of this species also known to be at least five years old.

Two Ruby-Crowned Kinglets Banded.—On October 13, 1926, two Ruby-crowned Kinglets (*Regulus c. calendula*) were taken together by William P. Wharton of Groton, Massachusetts, in a drip water-trap of the type designed by Richard B. Harding, having a depressed hopper-like opening in the top. These birds appeared to be alone. They were without the concealed ruby crown patch and were therefore females or immature birds.

Some Chickadee History.—Chickadee (*Penthestes a. atricapillus*) No. A26560 was given a red band on right tarsus on July 19, 1925. This bird, a young-of-the-year, followed two banded adult birds to a trap in July of that year and entered with them, all three being captured, the old birds previously having been given bands Nos. A6011 and A6012, and they were probably the parents of A26560. These two old birds had been coming to the station at intervals all through the nesting season, as only near-by nesting birds do. They were banded October 2, 1924, within ten minutes of each other. A6011 has not been captured since March 28, 1926, but during the nesting season of that year (1926) A6012 came to the station with A26677 wearing an orange and red band on the left tarsus, and they were presumably mates although none of their young was seen. They continued to come to the station with others during the fall of 1926 and the winter season of 1926-27.

By April 15, 1927, most of my wintering Chickadees had left the station for parts unknown, leaving behind only four of their kind, evidently two mated pairs which up to May 16th have appeared together many times.

On May 12, 1927, A6012 was seen feeding A26677 on the window feeding-shelf, the latter quivering its wings begging for food. From this exhibition I felt reasonably sure that A6012 was the male bird, but doubt was thrown on the matter the next day when A26677 was seen feeding A6012.

While not conclusively established, it seems probable that Chickadees A6012 and A26677 are now mated for their second nesting season.

Chickadee No. A26560, red right, is mated for this season with A54195, banded October 17, 1926, and up to May 16, 1927, they also came to the station together many times daily, but by the 24th A26560 came much less frequently.—Charles L. Whittle, Cohasset, Massachusetts, May 24, 1927.

Banding Parula and Cape May Warblers.—On May 13th, 1927, a mild sunshiny day, there were many Warblers and other birds around our yard and in the surrounding yards feeding in the cherry, apple, plum

and poplar trees. In the morning I noted among others a Cape May and some Parulas, and I was hoping they would stay about until afternoon as I expected some guests "to see a demonstration of bird banding". My wish was granted, for the birds stayed here all day.

At 3.30 P. M. a male Parula Warbler was captured in my pull-string open-top trap (with water drip), and fifteen minutes later we banded a male Cape May Warbler. Thirty minutes later we secured another male Cape May, and as we had kept the first one to show our guests, we carefully compared them and discovered that A34582 was less bright than A34581, but both were unmistakably males. At five o'clock another Parula was banded. The two Parulas were not compared, but they also were both males, even though they had only a faint black band on the breast.

The cherry trees are twelve feet from the veranda where we were observing the birds, and the open-top trap stands on the ground under a plum tree twenty feet farther away. These Cape Mays were the first of this species banded here, my total species banded now standing at fifty-one.—(Mrs.) MARY E. F. HUBBARD, New Haven, Conn., June 3, 1927.

Distribution of the April 1927 Bulletin.—Readers of the *Bulletin* doubtless noted our change of policy as set forth under the heading "Announcement" in the last number, namely to open our pages to any one wishing to publish articles or notes calculated to advance the science of Ornithology by bird-banding methods. In order that bird-banders in this country and in Canada should be advised of this fact, arrangements were made with the Bureau of Biological Survey to distribute copies of that number to all banders in the Eastern, Inland and Western Bird Banding Associations, the *Bulletin* going out under government frank with an accompanying letter from Mr. W. C. Henderson, Associate Chief of the Bureau. About ten hundred and fifty copies were thus distributed to the three associations mentioned, this Association supplying them gratis.

A Query Regarding Purple Finches.—It is a remarkable fact that during five nesting seasons at two banding stations where opportunity to observe Purple Finches at short range is perhaps unsurpassed, I have never seen an olivaceous bird of this species, an immature male, courting another olivaceous Purple Finch. If, as it is believed, this species mates when the birds are in their first winter plumage, it is strange that no case of the kind referred to has ever been recognizably seen by me. Furthermore, I have never heard to my knowledge an olivaceous Purple Finch sing the familiar, ecstatic warble of the "rosy" male. Many times, both in Peterboro, New Hampshire, and in Cohasset, Massachusetts, on hearing such a song, I have searched out the singer and have invariably found him to be an adult bird. Mrs. Whittle has on the contrary on one or two occasions seen instances of a courting olivaceous bird and has heard such birds sing the ecstatic warble of the old male. That many olivaceous birds presumed to be immature males sing is obvious. Before nest building begins, such birds sing all about my Cohasset banding station, on the ground, shelf and feeding tray, but the song is very different from that of old males, a simple song, of six or eight notes, familiar to many, a song much less frequently heard about my station during nesting time.

The question I would like answered is: Why, since the number of living

young or immature males must be large, do we see so little evidence of their courting or mating, one of the familiar sights among rosy males?

This note is published in the hope that those of our banders who have had an opportunity to study this species at nesting time will write me in what degree their experiences coincide with or differ from mine.—C. L. WHITTLE.

Concerning the Nesting and Trapping of the Barn Swallow.—During 1925 only one pair of the Barn Swallow (*Hirundo erythrogastra*) nested in the hay loft of my barn. In the spring about the time Swallows first appeared, I selected a few small pieces of board, about one inch by one inch by three inches and nailed them to the sides of the rafters as a support for possible Swallows' nests. When a pair of these birds appeared, they appropriated one of these rests and built a nest on the north side of the rafter, about five feet from the north wall and about five and one-half feet above the floor. In this nest five young were raised, and on July 9, 1925, they were banded, Nos. A1105—A1109.

Going to the loft on July 13, 1925 afterdark, I found a male Barn Swallow roosting on an old discarded window sash, which hung upon a nail on the wall of the barn loft, about five feet from the nest. I walked up to it with a flash-light and took it in my hands, and banded it. I then attempted to catch the female, but she flew and disappeared out of the window. The following evening, July 14th, having prepared a net of mosquito netting, I again went to the loft. The male was in his former position on the old window sash, and the female with the young were in the nest. Approaching the nest quietly, I slipped the net over the nest, and secured and banded her, No. A1114.

I have had in mind a Swallow trap to be made of cotton mosquito netting, fastened to a hinged frame of flexible copper-wire so made as to be easily screwed to the rafters or timber of a barn below a nest. This device could be operated as a pull-string trap, to catch the adult birds, but I have had no opportunity to try it out.—GEORGE E. ALLEN, Whitinsville, Mass.

A Black-throated Blue Warbler Return near Lake Asquam, New Hampshire.—On the twenty-eighth of June 1926, I banded a female Black-throated Blue Warbler (*Dendroica c. caerulescens*) with number A65065 (a plain band), and her mate with a scarlet band number A15649. Their three fledglings were also banded when eight days old with numbers A65063, A65064 (uncolored) and A15646, a blue band.

On June 1, 1927, I found a newly finished Black-throated Blue Warbler's nest about a quarter of a mile from the nest occupied by one of the above family banded in 1926. A blind was erected from which to make detailed observations of the nesting habits of the species.

A clutch of four eggs was completed on June fifth and the female commenced incubating them. The first time I saw her leave the nest I observed that she was banded. Three eggs hatched on June eighteenth, the fourth being sterile. On June twenty-sixth, when the female was brooding the well-grown young, and while the sun was shining on her band, I approached within five feet of the nest and with powerful binoculars read the first two figures on the band, "65", thus identifying her as A65065.

When I entered the blind on June twenty-eighth at 5.30 A. M., the nest was empty, the young birds having left the night before. In a few minutes, however, I located and captured two of them "chippering" in

the laurel, about twenty feet from the nest. They were placed in a gathering cage, weighed, measured, and the details of their plumage recorded.

My Chardonneret trap containing one fledgling was next placed near the blind with the result that the male was quickly trapped and banded with a rose-colored band, number A15648. Half an hour later the return female was trapped, and her number, A65065, which she wore on the left tarsus was confirmed. At this time I banded her right tarsus with a rose-colored band, number A15642, in the hope of getting a "Sight Return" of her next year.

The three fledglings of this year's nest wear numbers A15644 (yellow band left), A15645 (yellow band right), and A15647, a blue band.

So far I have not seen her last year's mate.—KATHARINE C. HARDING, June 28, 1927.

A Plea for More Bird-Weighers.—The heaviest adult Song Sparrows I have banded were captured at Cohasset, Massachusetts, in early April 1926. These ranged in weight between 25.00 and 27.00 grams. In her journal such birds were described as "large and rangy" by Mrs. Whittle, who has banded several during the late fall (October) migration in Peterboro, New Hampshire, but they were not weighed. Such birds in all cases have passed through our stations as migrants and none has been captured as a repeat or a return. In a paper appearing in *The Auk** I have called attention to such unusually heavy birds and raised the question whether they were not representatives of a northern race of this species, not collected on its breeding grounds, but appearing in our museums (collected in migration) as the largest specimens of the Eastern Song Sparrow. It has been stated that a variation in the measured parts of birds of 20 percent may be expected.

It is presumed that Song Sparrows having measurements much in excess of the average are also heavier than the average. Acting on this theory, I have begun an investigation of the average weight of *nesting* Song Sparrows both in Peterboro and in Cohasset, and to date eight such birds have been weighed, the range in weight being from 20.00 to 22.00 grams, and the average weight being 21.09 grams, or four to five grams less than the heavy birds taken in April. The sexes of these birds were not determined. It is too early to make any inferences from these meagre data. All eight birds are feeding daily at our banding stations, a surplus of canary seeds being always available so that the birds are not likely to be underweight.

The writer would like assistance in this investigation by having others of our members take up bird-weighing in general as a part of their regular work. Balances, sensitive to fractions of a gram, are not expensive. Live bird-weighing is a rather neglected ornithological field. I feel sure that the determination of the average weights of locally nesting birds of many species throughout their ranges, itself well worth finding out, will furnish in addition information of value at present not easily foreseen.—CHARLES L. WHITTLE, Cohasset, Massachusetts, June 1927.

A Chebec Recovery.—Mr. A. W. Higgins reports the recovery of a Least Flycatcher, or Chebec, (*Empidonax minimus*) near Lake Assawompsett, Middleboro, Massachusetts, on June 4, 1927. This bird was banded

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* "On the Nature of the Relationship existing Among Land Birds During Sustained Aerial Migration", Vol. XLIII, 1926, p. 498 (foot-note).

by him at Rock, Massachusetts, some five miles southwesterly from where it was found dead, and was one of two fledglings banded July 3, 1924.

Recoveries of Northern Water Birds, Banded by Harrison F. Lewis.—Mr. Harrison F. Lewis reports the recovery of a Ring-billed Gull (*Larus delawarensis*) No. 405860, a juvenile, banded by him in Fog Island Sanctuary, Saguenay County, Quebec, on July 15, 1926. The bird was captured by O. F. Swed at Crystal River, Florida, on March 18, 1927.

A Common Murre (*Uria t. troille*) No. 201439, a juvenile, banded by him on August 10, 1926, at Cape Whittle Sanctuary, Saguenay County, Quebec, was shot at Hermitage, Newfoundland, February 8, 1927.

A Great Black-backed Gull (*Larus marinus*) No. 418714, banded by him as a juvenile at St. Mary Islands, Saguenay County, Quebec, on August 3, 1926, was taken by Peter Rioux at Winter Houses, Port au Port, St. Georges District, Newfoundland, and reported on May 13, 1927. The date of the capture and the ultimate fate of the bird were not reported.

Corrections.—In Re Purple Finch (*Carpodacus p. purpureus*), Mr. Edward H. Forbush writes the editor as follows under date of May 6, 1927:

> "I would like an opportunity to make a correction of that matter I wrote for the April 1927 Bird Banding Bulletin, page 34. I either wrote or the printer made me write that the Purple Finch turned suddenly red in spring. It should have been—turned suddenly redder, or that its red intensifies."

In Re Ring-billed Gull (*Larus delawarensis*) and Common Cormorant (*Phalacrocorax carbo*), Mr. Harrison F. Lewis has called attention to the fact that the Ring-billed Gull and the Common Cormorant banded by him are erroneously listed as returns under the heading "A Partial List of Birds which Have Been Captured as Returns at or near their Old Nesting Places" published in the Bulletin of this Association for October 1926, page 85. The inclusion of these birds in the above list was not justified by the information in our files and the records should be stricken from the list. As used by the Bureau of Biological Survey, these captures were indeed returns, but the list was published to show the approximate number of species within the territory of this Association which, banded on their nesting grounds, were recaptured there during a later nesting season, in an attempt to answer the question so often asked, namely,—Do migratory birds return to their old nesting place to nest?

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